

New Air leakage testing requirements under the 2018 Virginia Residential Code.

(Blower Door Testing)

Duct Leakage testing still required same as per the 2015 VRC

This is effective July 1st 2022. Cumberland County Building Inspections will start requiring the written report to be provided on and after September 1st 2022. The report will be required no later than final inspection.

N1102.4.1.2 (R402.4.1.2) Testing.

The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding five air changes per hour in Climate Zone 4. Testing shall be conducted in accordance with RESNET/ICC 380, ASTM E779, or ASTM E1827 and reported at a pressure of 0.2 inches w.g. (50 Pa). A written report of the results of the test shall be signed by the party conducting the test and provided to the building official. Testing shall be conducted by a Virginia licensed general contractor, a Virginia licensed HVAC contractor, a Virginia licensed home inspector, a Virginia registered design professional, a certified BPI Envelope Professional, a certified HERS rater, or a certified duct and envelope tightness rater. The party conducting the test shall have been trained on the equipment used to perform the test. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

Note: Should additional sealing be required as a result of the test, consideration may be given to the issuance of temporary certificate of occupancy in accordance with Section 116.1.1.

During testing:

- 1.Exterior windows and doors and fireplace and stove doors shall be closed, but not sealed beyond the intended weatherstripping or other infiltration control measures;
- 2.Dampers, including exhaust, intake, makeup air, backdraft, and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
- 3.Interior doors, if installed at the time of the test, shall be open;
- 4.Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
- 5.Heating and cooling systems, if installed at the time of the test, shall be turned off; and
- 6.Supply and return registers, if installed at the time of the test, shall be fully open.

Significant Changes under the 2018 Virginia Residential Code

Effective 7/1/2022

Ceiling insulation. Increases minimum ceiling insulation to R-49 with an exception for R-38 if it is carried over the top plate completely without compression.

Arc-fault. Requires arc-fault circuit interrupters (AFCIs) on all outlets with an exception for locations where Ground Fault Circuit Interrupters (GFCIs) are already required.

Effective 9/1/2022

Thermal envelope. Blower door testing/Air leakage test required, not to exceed 5 air changes per hour. See informational sheet for more.

Plan submittals shall now include the following in addition to all previous requirements.

1. Insulation materials and their R-values.
2. Fenestration U-factors and solar heat gain coefficients (SHGC).
3. Area-weighted U-factor and solar heat gain coefficient (SHGC) calculations.
4. Mechanical system design criteria.
5. Mechanical and service water heating systems and equipment types, sizes and efficiencies.
6. Equipment and system controls.
7. Duct sealing, duct and pipe insulation and location.
8. Air sealing details.

The building thermal envelope shall be represented on the construction documents.

A permanent certificate shall be completed by the builder or other approved party and posted on a wall in the space where the furnace is located, a utility room or an approved location inside the building. Where located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label, or other required labels. The certificate shall indicate the predominant R-values of insulation installed in or on ceilings, roofs, walls, or foundation components, such as slabs, basement walls, crawl space walls, and floors and ducts outside conditioned spaces; U-factors of fenestration and the solar heat gain coefficient (SHGC) of fenestration; and the results from any required duct system and building envelope air leakage testing performed on the building. Where there is more than one value for each component, the certificate shall indicate the value covering the largest area. The certificate shall indicate the types and efficiencies of heating, cooling, and service water heating equipment. Where a gas-fired unvented room heater, electric furnace, or baseboard electric

heater is installed in the residence, the certificate shall indicate “gas-fired unvented room heater,” “electric furnace,” or “baseboard electric heater,” as appropriate. An efficiency shall not be indicated for gas-fired unvented room heaters, electric furnaces, and electric baseboard heaters.

All new energy requirements under the 2018 VRC are subject to site inspection and must meet the listed items in this handout.

For more information, please visit <https://vbcoa.org/resources/codes/> for read only version of the codes to better familiarize your self with the changes.